



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,604	12/05/2003	David D. Balhiser	10030444-1	9769

7590 01/13/2005
AGILENT TECHNOLOGIES, INC.
Legal Department, DL429
Intellectual Property Administration
P.O. Box 7599
Loveland, CO 80537-0599

EXAMINER	
WELLS, KENNETH B	
ART UNIT	PAPER NUMBER
2816	

DATE MAILED: 01/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/728,604

Applicant(s)

BALHISER ET AL.

Examiner

Kenneth B. Wells

Art Unit

2816

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 December 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 December 2003 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

Art Unit: 2816

1. The disclosure is objected to because of the following informalities: on page 6, line 5 of paragraph [0019], the word "complementary" is misspelled. Appropriate correction is required.

2. The drawings are objected to because the black boxes in instant Fig. 3 need text labels.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to

Art Unit: 2816

obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 11 is misdescriptive because the claim does not read on any of the disclosed embodiments, i.e., a single delay circuit with an output connected to the gates of the two (feedback) pull-up/pull-down FETs.

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 9, 13-17, 19 and 21-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Williams et al.

Art Unit: 2816

Note Fig. 1, where the recited first voltage is the +12V power supply level; the recited first switching circuit is BJT 36; the recited first current clamp is resistor 52; and the first non-persistent charge boost circuit is capacitor 56. The recited second switching circuit is BJT 44; the recited second current clamp is resistor 54; and the recited first non-persistent charge boost circuit is capacitor 58. Note further the teaching that capacitor 56 increases the switching speed of BJT 36 (column 2, lines 51+).

5. "The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 5, 7, 8, 12, 18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams et al.

As to claim 5, the limitation that the capacitor is at least twice the sum of the capacitance of the signal line and gate capacitance of a receiver coupled to the output

Art Unit: 2816

(node 14 in Williams et al) would have been obvious to one of ordinary skill in the art who knows that line/gate capacitances are generally low, and boosting capacitors generally have large values (the higher the switching speed up needed, the higher the boost capacitor is made).

As to claim 7, the use of FETs instead of BJTs is a well-known design expedient for those having ordinary skill in the art.

As to claims 8 and 12, applicant's admitted prior art USP 6,351,171 discloses the well-known use of a receiver with a voltage clamp for well-known protection and/or speed-up purposes.

As to claims 18 and 20, clamping the receiving end signals to a smaller voltage than those at the transmit end (i.e., at the output terminal 14 in Williams et al) would have been obvious as well, for the situation where the receiver is designed to handle small signals (a typical situation in the art), whereas the driver (transmitter) drives larger signals because they need to travel longer distances and/or driver higher loads.

Art Unit: 2816

6. Claims 4, 6, 10, 11 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hisaka in view of Williams et al.

As to claims 4, 6 and 24, note Fig. 1 of Hisaka, which shows a first switching circuit (the PFET within inverter 13), a first current clamp (R10), a delay circuit (inverters 14 and 15) and a FET (Tr15) is parallel with the resistor. Not shown is the parallel capacitor but such would have been obvious in view of the above-noted teachings of Williams et al. The motivation for adding such a capacitor in parallel with the resistor R10 is to increase the switching speed of the PFET within inverter 13 (as taught by Williams et al).

As to claims 10 and 11, the use of a second clamp resistor and boosting capacitor in the pull-down path of Hisaka's inverter 13 and in parallel with a second FET receiving an output of a second delay circuit would have been obvious for the same purpose as that on the pull-up side (i.e., to speed up the pull-down switching of inverter 13).

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

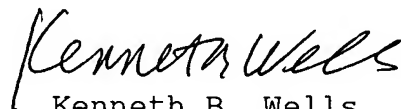
Art Unit: 2816

Note Fig. 2 of Mehl, Figs. 2 and 3 of Davenport et al and Fig. 1 of Numata et al.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth B. Wells whose telephone number is (571)272-1757. The examiner can normally be reached on Monday through Friday from 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy P. Callahan, can be reached at (571)272-1740. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kenneth B. Wells
Primary Examiner
Art Unit 2816

January 10, 2005